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GOVERNMENT OF INDIA

I. T. C.
BICHROMATE INDUSTRY REPORT

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REPORT ON CONTINUANCE OF PROTECTION TO THE BICHROMATES INDUSTRY.

Origin of the case.

The bichromates industry was one of those the establishment of which was considered essential by the Government of India under conditions created by the war and to which Government gave an assurance early in 1940 that if such industries were conducted on sound business lines, Government would protect them against unfair foreign competition after the War. In common with several other industries established under similar conditions, the claim of the bichromate industry to protection or assistance was referred to the Tariff Board by Government by the Department of Commerce Resolution No.218-T(55)/45 dated 3rd November, 1945. The Board, after investigation, submitted a Report to Government on 21st May, 1946. The Board's main recommendation was that the then existing revenue duty of 30 per cent. ad valorem should be converted into a protective duty at the same rate for a period of nearly 3 years upto 31st March, 1949 and that the protective duty should be made applicable to "sodium bichromate, potassium bichromate and all chrome compounds". Government accepted the recommendation with regard to the rate and the scope of the protective duty, but decided that the period of protection should be limited to one year in the first instance, since the Board's estimate of the cost of production of indigenous bichromates was not based on an annual output of 600 tons which the Board considered to be the minimum necessary for an economic unit. It was the intention of Government to review the position during the course of 1947, but for various reasons, the review could not be undertaken until December, 1948, when the Board carried out a summary investigation and recommended that the protection granted to this industry should be continued upto 31st March, 1950. The duration of the protective duty was accordingly extended upto 31st March, 1950. In September, 1949, the Board conducted a comprehensive inquiry into this industry and submitted a Report to Government on 28th October, 1949. The Board recommended continuance of protection at the existing rate of 30 per cent. *ad valorem* upto 31st March, 1952, and the recommendation was accepted by Government. Subsequently, the period of protection was extended by Government, in consultation with the Tariff Commission, first to 31st December, 1952, later to 31st December, 1953, and again to 31st December, 1954. Under the Finance Act, 1951, the protective duty on bichromates was enhanced to 31½ per cent. *ad valorem* as a revenue measure. Since the period of protection is due to expire on 31st December, 1954, the Commission undertook the present inquiry under Sections 11(e) and 13 of the Tariff Commission Act, 1951 under which the Commission has been authorised to inquire into and report to Government on any further action required in relation to the protection granted to an industry, with a view to its increase, decrease, modification or abolition according to the circumstances of the case.

Method of Inquiry.

2.(a) On 5th August, 1953, the Commission issued its questionnaires to producers, importers and consumers of bichromates. On 10th August, 1953 a press communique was issued inviting persons, firms and associations interested in this industry to obtain copies of the Commission's questionnaires and to submit replies thereto. The Industrial Adviser (Chemicals), Ministry of Commerce and Industry, Government of India and the Textile Commissioner were requested to furnish memoranda on various points arising out of the inquiry. Information regarding the progress of the industry since the grant of protection was obtained from the State Governments of Bombay, West Bengal, Madras, Mysore and Uttar Pradesh. The Director, Indian Standards Institution, was addressed for information regarding the standard specifications for bichromates. The Ministry of Transport was invited to offer its views on the industry's request for concessional freight rates on chrome ore and other raw materials required for the manufacture of bichromates. The views of the Ministry of Defence were obtained on the complaint made by the industry that the substitution of mineral khaki cloth by olive green cloth for Army requirements had adversely affected the demand for indigenous bichromates. The High Commission for India in the United Kingdom and the Indian Embassies in West Germany and Japan were addressed for information regarding f.o.b. prices and c.i.f. prices of sodium bichromate and potassium bichromate. A list of those to whom the questionnaires were issued and from whom replies or memoranda were received is given in Appendix I.

(b) Shri B.N. Das Gupta, Member, visited the factory of the Buckingham and Carnatic Mills Co.Ltd., Madras on 21st September, 1953. Shri B.N. Adarkar and Shri C. Ramasubban, Members, visited the Central Leather Research Institute, ~~Madras,~~ on 19th October, 1953 and the Buckingham and Carnatic Mills Co.Ltd., Madras, on 20th October, 1953. Shri S.S. Mehta, Technical Director and Shri S.K. Basu, Cost Accounts Officer, visited the factory of the Golden Chemicals, Ltd., Bombay, on 13th November, 1953 for the purpose of collecting cost data relating to that factory. Shri Basu carried out cost investigation at the factory of the Cawnpore Chemical Works, Ltd., Kanpur, from 23rd to 26th November, 1953. Shri S.V. Rajan, Assistant Cost Accounts Officer, examined the cost of production at the Buckingham and Carnatic Mills Co.Ltd., Madras, from 30th November, to 2nd December, 1953. A public inquiry into this industry was held at the Commission's office at Bombay on 15th December, 1953. A list of persons who attended the inquiry and gave evidence is given in Appendix II.

3.(a) At the previous inquiry held in 1949, the Tariff Board estimated the domestic demand for sodium bichromate at 2,400 tons and that for potassium bichromate at 400 tons per annum for the next three years. The evidence received by us during the present inquiry shows

Domestic demand.

that most of the factors which were then held responsible for a decline in the domestic consumption of bichromates are still in operation. The offtako of the chrome tanning industry, which is the largest consumer of bichromates, is restricted by the fact that the quality of hides has deteriorated owing to the ban on cow-slaughter in certain States, and this combined with the overall shortage of hides and skins, has affected chrome tanning adversely. With the deterioration in the quality of chrome tanned leather, the export demand for it is also declining. The demand for bichromates from the textile industry, which is the second largest consumer, has also fallen. The All India Bichromate Manufacturers' Association has represented that the reduced offtake by the textile industry is due to the competition from vat dyes and sulphur dyes and particularly to the fact that for strategic reasons, the Defence Services have switched over to olive green shade cloth for clothing, tentage, etc. for which imported vat dyes are used. We have carefully examined the matter and find that the above contention is not borne out by the evidence received. The Buckingham and Carnatic Mills, who are the principal suppliers of olive green cloth to the Army, have explained that the olive green cloth is only "vat-topped", i.e., it is first dyed with bichromates and then with vat green. The quality of bichromates used per unit of this type of cloth is almost the same as that required for plain khaki cloth; in fact, it would be far more expensive to produce olive green cloth by using vat dyes alone. The change in the Defence specifications, therefore, has very little to do with the reduced consumption of bichromates in the textile industry. This is confirmed by the Textile Commissioner also and we understand that the Defence Ministry had explained this position to the representatives of the bichromates industry at a conference held at New Delhi as early as October, 1950. The main reason for the reduced offtake of bichromates by the textile industry is to be found in the fact that the

Defence requirements for dyed cloth in general have declined during the past two years. As regards the alleged competition from vat khaki, we understand from the Textile Commissioner that vat khaki is much more expensive and that no consumer could be expected to substitute mineral khaki with vat khaki. Sulphur khaki also does not offer any serious competition to mineral khaki since cloth processed with sulphur dyes is known to be of inferior fastness. Apart from the demand for bichromates for production of cloth for the Army and the civilian population, an increased use of khaki cloth by other users may of course be of help to the domestic industry. The manufacturers have informed us that with a view to increasing the consumption of bichromates, they have decided to start a propaganda drive to popularise the use of mineral khaki uniforms by the State Police, Railways, Municipalities and private institutions. We recommend that the Central Government should draw the attention of the State Governments, Railways, local authorities and semi-Government bodies to the substantial benefit likely to accrue to the domestic bichromates industry by their adoption of khaki uniforms . The attention of the All India Khadi and Village Industries Board may also be drawn to this matter, so far as khadi uniforms are concerned.

(b)The Association has also stated that while the exports of vat khaki cloth are on an Open General Licence, those of mineral khaki cloth are restricted. The fact is that vat dyed khaki cloth is not on O.G.L. for export purposes, but is freely licensed for shipment upto 30th June, 1954, while exports of mineral khaki cloth by certain composite mills are allowed to the extent of 33 1/3 per cent. of production in the case of mineral khaki drill and 15 per cent. each in the case of mineral khaki cellular shirting and other types of mineral khaki cloth. In addition, exports of mineral khaki cloth by processors other than mills are allowed upto a ceiling of 1 million yards. The Textile Commissioner has explained that only a few mills have so far shown any anxiety to utilise their export quotas to the full extent. Only 8 mills have regular mineral khaki dyeing equipment and although they have a potential capacity of 50 lakhs yards per month, their actual production is only about 33.5 lakhs yards per month, which means that about 30 per cent. of the capacity is today unutilised. In some cases, the machinery has become old and in others, the mills do not have sufficient production of grey drill for dyeing into mineral khaki. The Textile Commissioner is of the view that since only a few mills have been able to utilise their export quotas to the full extent, a relaxation of the export restrictions will not be of any help to the domestic bichromates industry. The outside processors also have been able to export only 50,000 yards so far in the current licensing period, although the ceiling fixed by Government is one million yards. The Textile Commissioner has added that unrestricted facilities for export would have resulted in the better types of mineral khaki cloth, "which are in great demand in the country as well as in the export markets", being largely exported, thus adversely affecting the supplies essential for internal requirements. We do not find these arguments quite convincing. If, as the Textile Commissioner has stated, mineral khaki cloth is in great demand in the export markets, and if at least some mills have been able to utilise their full export quotas, it stands to reason that a relaxation of the export restrictions will enable at least some mills to expand their exports. Of course, only the mills producing mineral khaki cloth of good quality may be able to utilise larger export quotas and this creates the possibility that supplies of good quality mineral khaki cloth for internal consumption may be reduced, if larger exports were to take place. On the other hand, the evidence received by us shows that the internal demand for mineral khaki cloth (including the Army requirements) is now much lower than it was before. Even if it is found that mills which are capable of producing good quality mineral khaki cloth have limited capacity, the most desirable course in our view would be to provide some inducement to such mills to augment their capacity. A liberalisation of the export policy may give the necessary inducement unless some other measures to achieve the same objective are considered preferable. Under the present system of export restrictions, export quotas are expressed as a percentage of production, but this will not serve as an inducement to expand productive capacity, unless the domestic demand also increases _pari passu_ with the export demand, which is not the position at present. We, therefore, recommend that the desirability of liberalising the export policy regarding mineral khaki cloth or alternatively of bringing about an increase in the capacity of the more efficient mills, if the existing capacity of such mills is considered inadequate to permit a liberalisation of exports, should be considered with a view to expanding the total production of mineral khaki cloth in the country and thereby increasing the consumption of bichromates.

(c) The Association has also referred to certain lacunae in the present import control arrangements which adversely affect the demand for indigenous bichromates. It is stated that certain bicycle manufacturers import sodium bichromate in the form of solutions or crystals under various brand names and that chromic acid is imported with chrome plating equipment as an auxiliary material. It was also stated at the public inquiry that while imports of chrome oxide green were permitted to actual users only, there were no restrictions on imports of Brunswick Green in which also bichromates are used and which is consumed in much larger quantities. We are informed that there is sufficient capacity available in the country for the manufacture of Brunswick Green but that this mineral is not being produced in substantial quantities because of competiton from the imported product. We recommend that these complaints may be looked into.

(d) The domestic demand for bichromates has to be estimated in the light of the consumption trends described above. It was stated at the public inquiry that the present demand for sodium bichromate from the tanneries might be estimated at 800 to 1000 tons per annum. The Director of Industries and Commerce, Madras, however, has estimated the present requirements of the tanning industry, on the basis of the existing production of chrome tanned upper leathers, including glace kid, at about 1330 tons per annum and we consider this estimate to be more realistic. Taking into account the capacity of the composite mills which are equipped to produce mineral khaki cloth, the Textile Commissioner has estimated their requirements for sodium bichromate at about 520 tons per annum. The quantity of sodium bichromate required by outside processors is estimated at 80 tons per annum. Allowing for miscellaneous requirements and some increase as a result of the efforts being made by the bichromates manufacturers to popularise the use of mineral khaki cloth, the total demand for sodium bichromate from the textile industry is estimated at not more than 700 tons per annum. According to the estimates made by the Development Wing, the paints and pigments industry would require 120 tons of sodium bichromate and the match industry 150 tons of potassium bichromates. Sodium bichromate is also used for wood preservation and the present demand for this purpose is estimated by the Forest Research Institute at about 250 tons per annum. After carefully considering the available evidence, we have come to the conclusion that the annual domestic demand may be estimated at about 2400 tons for sodium bichromate and 150 tons for potassium bichromate.

(e) As regards by-products, the Development Wing has estimated the demand for sodium sulphate at 12,000 tons made up of 10,000 tons for the paper industry, 1,000 tons for the glass industry and 1,000 tons for the textiles , pharmaceutical and other industries. These estimates are based on the installed capacity of the consuming industries. On the same basis, the Development Wing has estimated the demand for sodium sulphide, which is produced from sodium sulphate, at 2,000 tons for the textile industry, 700 tons for the leather industry, 300 tons for the paper industry and 300 tons for the soda ash and other chemical industries, making up a total of 3,300 tons. The present position regarding the production of sodium sulphate and sodium sulphide by the bichromates industry is discussed later in this Report. The bichromates industry also produces derivatives like chromium sulphate, chrome alum, chrome pigments, etc. These are, however, produced according to demand and sufficient information is not available regarding their consumption in various industries. The Buckingham and Carnatic Mills have expressed the view that the demand for chromic acid is likely to increase in course of time, as the cycle and automobile industries will require considerable quantities of this material.

4.(a) When the Tariff Board investigated the claim of this industry in 1946, 17 units, with a total rated capacity of 6,220 tons were engaged in the production of bichromates.

Rated capacity and production.

Owing to the decline in demand which followed the cessation of hostilities and the increase in internal competition, several small units had to close down. At the time of the second inquiry held in 1949, only 11 units were found to be in existence, with an aggregate rated capacity of 5,500 tons. Since, 1949, the number of units has gone down to 8, but some of the units have expanded their capacity, with the result that the aggregate rated capacity of the industry is now estimated at 6060 tons per annum. The following statement gives the figures of rated capacity of individual units and their actual production from 1950 to 1952 and during the first 9 months of 1953.

STATEMENT SHOWING THE ANNUAL RATED CAPACITY AND ACTUAL PRODUCTION OF SODIUM BICHROMATE AND POTASSIUM BICHROMATE FOR THE YEARS 1950, 1951, 1952 AND JANUARY TO SEPTEMBER, 1953.

			Annual rated capacity (Tons)	PRODUCTION OF SODIUM BICHROMATE				PRODUCTION OF POTASSIUM BICHROMATE			
				1950	1951	1952	1953 (Jan.-Sept)	1950	1951	1952	1953 (Jan.-Sept.)
1.	M/s.	Hindustan Chemical Works Ltd., Bombay.	720	168.50	327.00	109.50	223.67	29.00	64.00	26.00	19.92
2.	"	Pioneer Chromate Works Ltd.	1,000	286.00	310.00	98.00	213.65	7.60	6.95	9.60	7.59
3.	"	Premier Chromate Works Ltd., Bombay.	1,000	108.50	394.30	129.75	5.50	12.55	34.65	22.50	7.19
4.	"	Golden Chemicals Ltd., Bombay.	600	270.50	425.25	314.30	336.60	61.20	111.50	79.30	58.65
5.	"	Buckingham & Carnatic Co.Ltd., Madras.	1,200	659.79	814.35	133.26	475.52	2.00	4.50	4.00	1.00
6.	"	Government Dichromate Factory, Belagula, Mysore.	360	18.15	65.87	12.47	1.02	6.25	11.28	3.73	0.92
7.	"	The Cawnpore Chemical Works Ltd., Kanpur, U.P.	1,000	362.00	575.00	526.00	403.70	6.50	Nil	15.50	Not available
8.	"	Chemical Industries Co.Ltd., Calcutta	180	21.00	38.00	64.00	Not abailable	1.00	0.40	0.70	Not available
		Total:	6,060	1,894.44	2,949.77	1,387.28	1,659.66	126.10	233.28	161.33	95.27

It will be observed that the rated capacity of the industry is far in excess of the domestic demand for bichromates. In fact, the industry has not been able to utilise its full capacity at any time since its inception. In 1952, the industry was able to utilise barely 25 per cent. of its capacity. Production of sodium bichromates by the 8 units now in existence amounted to 1894 tons in 1950, 2,950 tons in 1951, 1,387 tons in 1952 and 1,660 tons in the first nine months of 1953. The corresponding figures for potassium bichromates are 126 tons in 1950, 233 tons in 1951, 161 tons in 1952 and 95 tons in the first nine months of 1953.

(b) The eight units which are now engaged in the production of bichromates have a total gross block of Rs.47 lakhs and the total number of workers employed in them in 1952 was 860.

(c) Some of the units have schemes for modernising their plant and processes of production. The Golden Chemicals propose to put up a rotary kiln to replace their existing reverberatory furnaces. The Pioneer Chromate Works have formulated a scheme for installing a new type of furnace with a 2½ ton daily capacity, which is expected to give a much higher recovery of sodium bichromate with considerable saving in labour cost. We recommend that these schemes may be examined by the Development Wing of the Ministry of Commerce and Industry and that if they are found feasible, necessary assistance may be given to the firms in implementing them.

By-products and derivatives.

5. At the previous inquiries, the Tariff Board had laid considerable stress on the utilisation of sodium sulphate which is obtained as a by-product in the manufacture of bichromates. It is gratifying to note that the industry has made a fair progress in this direction since the last inquiry. The Buckingham and Carnatic Mills recover sodium sulphate and sell it as anhydrous sodium

sulphate. They also produce chrome oxide green, basic chrome tan and chromic acid. They have produced small quantities of sodium sulphide, but they propose to take up regular production when the current alterations to their plant are completed. The Golden Chemicals refine their own sodium sulphate and also obtain additional quantities from Jodhpur for refining. The Government Bichromate Factory, Mysore, also recovers sodium sulphate and sells it after purification to the Mysore Paper Mills, Bhadravati. The Pioneer Chromate Works produce anhydrous sodium sulphate from the by-product sodium sulphate obtained in their factory and from crude sodium sulphate obtained from Jodhpur. They have built a plant for the manufacture of Glauber's salt and a pilot plant for the manufacture of chrome oxide green. They propose to take up the production of sodium sulphide only when they are able to modernise their present equipment and process of manufacture. The Cawnpore Chemicals is the only one among the bichromate factories which produces sodium sulphide. The Hindustan Chemical Works has put up plants for the manufacture of anhydrous sodium sulphate, and ~~Gaubor's~~ salt and also for sodium sulphide, but has not yet commenced production of any of these products. From the evidence received by us, it is clear that the bichromate manufacturers have no longer any difficulty in disposing of their sodium sulphate, but that their production of chrome pigments, chrome tanning and plating materials and other chrome compounds is small and irregular. It is not necessary that the bichromate manufacturers themselves should produce the various chrome compounds to the full extent of the domestic requirements. The consumers of these compounds (which include the tanning, textiles, paints, ceramics, glass and electro-plating industries) either purchase them in the finished form or produce them themselves ffom sodium or potassium bichromate . For example, some paint manufacturers may purchase pigments consisting of lead chromate, whether imported or locally manufactured, while others may manufacture such pigments from purchased bichromates and lead acetate. Some manufacturers of fine chemicals, e.g., Kesar Sugar Works, purchase bichromates and make chromic acid and chrome alum. However, whether chrome compounds are made by the bichromate manufacturers themselves or by others, the inclusion of these compounds in the scheme of protection is justified, because an increase in the domestic production of these compounds would widen the market for bichromates and would thus be of direct help to the domestic bichromate industry. The following statements show the production of by-products and derivatives by the various bichromate factories during 1950, 1951 and 1952:-

STATEMENT SHOWING THE PRODUCTION OF BY-PRODUCTS DURING 1950, 1951 AND 1952.

(Figures in tons)

Name of producer	Calcined Glauber's salt or Anhydrous sodium sulphate			Sodium sulphide			Remarks
	1950	1951	1952	1950	1951	1952	
1. Golden Chemicals Ltd.	169 *	275 *	201 *				
2. Government Dichromate Factory	3	39.1	68.1				
3. Buckingham & Carnatic Co. Ltd.,	-	286.5	29.5		23.9	21.2	
4. Cawnpore Chemical Works	-	-	-	180 @	180 @	180 @	@ Approximate figures.
5. Pioneer Chromate Works, Ltd.	217	556	503				

* The total production of the firm from recovered sulphate, purchased yellow sulphate and Jodhpur sulphate has been 494 tons in 1950, 944 tons in 1951 and 946 tons in 1952.

GTL/-

STATEMENT SHOWING THE ANNUAL RATED CAPACITY AND PRODUCTION OF CHROME SALTS FOR THE YEAR 1950, 1951, AND 1952.

Sl.No.	Name of the firm	Annual rated capacity (Tons)	Production (Tons)		
			1950	1951	1952
1.	M/s. Hindustan Chemical Works Ltd., Bombay	45	6.30	4.50	
2.	M/s. Premier Chromate Works Ltd., Bombay	30	2.65	4.25	12.20
3.	M/s. Buckingham & Carnatic Co. Ltd., Madras	285	22.03	2.90	22.91
4.	Government Dichromate Factory, Belagula, Mysore	36	0.20	0.72	1.27
5.	M/s. Cawnpore Chemical Works Ltd., U.P.	50 - 100	Nil	3.00	4.00
	T O T A L	446 - 496	31.18	15.37	40.38

GTL/-

Raw materials.

6.(a) One of the main handicaps of the industry in relation to its foreign competitors is the high cost of materials. The indigenous materials used by the industry are, principally, chrome ore, lime or limestone and sulphuric acid, while the chief imported material is soda ash. High grade chrome ore, 48 to 50% Cr_2O_3 is produced only in Orissa and is sold mainly in the form of lumps. The chrome ore available from Bihar, though generally of high grade, is not much favoured by the bichromate manufacturers, as it shows wide variations in quality. The Mysore ore is of lower Cr_2O_3 content, but it is crushed and concentrated by the suppliers themselves and has 45% Cr_2O_3 in the form in which it is sold. Until recently, exports of all chrome ore, 46 per cent. Cr_2O_3 and above were prohibited, but according to a Press Note issued by the Government of India on 26th December, 1953, it has been decided to allow exports of 15,000 tons of chrome ore, irrespective of the grade, during the period from January to June 1954. This liberalisation, it has been explained, was found necessary on a review of the position regarding chrome ore in the country. The bichromate manufacturers have represented that despite the export restrictions, the suppliers of high grade ore in Orissa have maintained their prices at a high level. The current prices of Orissa ore in lumps is Rs.105 per ton, which, the industry maintains, is high in relation to Mysore ore which is sold in powder form at the same rate. Production of chrome ore at Mysore is not sufficient to meet the entire requirements of the bichromate industry which has consequently to obtain a part of its supplies from Orissa. One possible explanation of current prices mentioned at the public inquiry was that, despite the ban on the exports of high grade ore which was in force till recently, the prices of this type of ore had continued to be influenced by those ruling in the export market. This is understandable, because the quantity of high grade ore purchased by the bichromate industry is small in relation to the quantity of low grade ore available for export. Low grade ore is sold at world prices and since this constitutes the major portion of the available supply, it is inevitable that the prices of high grade ore should tend to rule suitably higher; otherwise, the production of high grade ore would be adversely affected. Neverthless we recommend that the Central Government, in consultation with the State Governments concerned, may examine whether the premium charged by the suppliers of high grade chrome ore is reasonable.

(b) The high cost of sulphuric acid in India also puts the industry at a serious disadvantage. It is understood that the current price of sulphuric acid in the United Kingdom which is also dependent on imported sulphur, is Rs.143 per ton, as compared with Rs.210 or more in India. In our Report on the Hydroquinone Industry, submitted to Government in 1953, we have recommended an investigation into the costs and prices of sulphuric acid in India and Government have accepted the recommendation. We understand that the question of making sulphuric acid available to important consuming industries at reasonable prices is now under the consideration of the Development Council for Heavy Chemicals (Acids and Fertilisers). Since Sulphuric Acid is an essential material for several industries, we consider it highly important that early action should be taken to regulate its prices.

(c) As regards soda ash, most of the units use imported Magadi ash, the landed cost of which at the time of the inquiry was Rs.390 per ton including customs duty of Rs.128/- per ton. According to the "Industrial Chemist" of June, 1953, the price of soda ash for domestic consumption in the United Kingdom was Rs.136 per ton while the c.i.f. price of Magadi Soda ash imported into India was as high as Rs.248-12-0 per ton. The international trade in soda ash is in the hands of certain combines which charge discriminatory prices to different markets and this constitutes a serious disadvantage for industries which are dependent on imported soda ash. The industry has asked for refund of the import duty paid on soda ash used in the production of bichromates which are exported. On an average rate of consumption of one ton of soda ash per ton of sodium bichromate, the incidence of duty comes to Rs.128 per ton of sodium bichromate, or 7.9 per cent of the fair ex-works price. The bichromate industry has large surplus capacity and in our opinion the industry should be given all possible facilities towards reducing its prices in the export market. We recommend, therefore, that the industry should be granted a refund of the customs duty paid by it on imported soda ash which is used in the manufacture of bichromates for export. The procedure for such refunds has recently been simplified by an amendment to the Sea Customs Act and we hope that it will now be possible to concede this legitimate claim of the bichromate industry. There are probably no immediate prospects of the industry being able to develop a large export trade, but this concession would still be of value to the industry, as it may help the more efficient units to re-enter the export market as soon as conditions change for the better. So far as soda ash required for domestic consumption is concerned, the bichromate industry in general prefers Magadi ash to indigenous ash. The Buckingham and Carnatic Mills, however, are an exception. It has been their experience that although Magadi ash is certified by the suppliers to contain 97 per cent Na_2CO_3 content, it actually analyses, after drying, to a lower percentage of Na_2Co_3, sometimes as low as 92 per cent, and that at the current prices of Tatas' ash, the Buckingham and Carnatic Mills find it more economical to use Tatas' ash than Magadi ash. The quantity of soda ash used per ton of bichromate is also lower in their factory than in the other factories. We have carefully examined the matter and recommend that the bichromate factories which at present depend mainly on Magadi ash should try to use indigenous ash to the fullest extent possible in preference to imported ash.

(d) The industry has drawn our attention to the high prices of fuel oil and has suggested that the import duty on fuel oil used in the manufacture of bichromates and allied products should be refunded. The price of fuel oil has shown a marked increase in recent years. It rose from Rs.40 per ton in 1941 to Rs.180 per ton in 1952. The current price in Bombay is Rs.147 per ton delivered at the user's factory. Fuel oil is subject to duty at 15.75 per cent on a tariff value of Rs.100 per ton and since on an average about 2.5 tons of oil are required per ton of sodium bichromate, the incidence of the duty per ton of sodium bichromate comes to Rs.39.4 per ton or 2.44 per cent.of the fair ex-works price as determined by us in paragraph 12(e) below. The consumption of fuel oil is variable within wide limits while some units do not use fuel oil at all. Moreover, this is a material of general industrial use and we do not think, therefore, that it would be practicable to grant the refund of duty requested by the industry.

(e) The industry has complained of the heavy freight charges which it has to incur on the transport of materials. The bichromate factories are located in Bombay, Madras Kanpur, Calcutta and Mysore. All the factories, except the one in Mysore, have to obtain their chrome ore over a long distance from either Orissa or Mysore. In the Railway Tariff, chrome ore is included in Class I and is charged at 0.49 pie per maund per mile. to 0.40 pie per maund per mile, but when transported in wagonloads, it is charged at the low WL/C scale, the basis of which declines from 0.34 pie per maund per mile to 0.17 pie per maund per mile with the increase in distance. We understand from the manufacturers that the Bombay factories pay Rs.35 per ton by way of freight on chrome ore obtained from Orissa and Rs.25 per ton on ore obtained from Mysore. The Kanpur factory pays Rs.30 per ton on supplies from Orissa and Rs.45 per ton on those from Mysore. The Ministry of Railways have informed us that since chrome ore is being charged the same freight rates as other ores e.g., iron ore and manganese ore and industrial raw materials like limestone, gypsum, etc., they see no justification for according any preferential treatment to the bichromate industry in this matter. Prior to 1st October, 1948, chrome ore was classified with steam coal and the industry has asked for reversion to the rates then prevailing. The Ministry of Railways have explained that the higher rates introduced in 1948 were the result of a general revision of the rate structure made necessary by the fact that the cost of operation of railways was found to have gone up by about 232 per cent over the pre-war cost, and that reversion to the pre-1948 rate is, therefore, impracticable. The Ministry of Railways do not also see any justification for charging chrome ore at the low and uneconomic scale applicable to coal which has been specially provided in view of the importance of coal as a cheap fuel for the development of industries in the various parts of the country. We would, however, like the matter to be examined further in the light of the following considerations. In the first place, a freight charge of Rs.25 to Rs.45 per ton is very high in relation to the price of chrome ore at the source, which is Rs.105 per ton and it, therefore, needs to be considered whether chrome ore does not bear a relatively heavier burden than other ores. Secondly, the bichromate factories which have to be located at or near the centres of consumption and at a suitable distance from the sources of other materials like sulphuric acid, are subject to a special handicap on account of the distance from the sources of chrome ore which are mainly, located in Orissa, Mysore and Bihar. Thirdly, the industry has a large idle capacity and a reduction in freights on its materials and the consequent reduction in its costs may be of some help to the industry in increasing its production. The existing freight rates are a handicap to the industry not merely with respect to chrome ore, but also limestone and other materials. We recommend, therefore, that the industry should take up the question of freight rates on its materials again with the transport authorities and the latter should give it further consideration in the light of the special circumstances referred to above. We understand that railway bookings for chrome ore from stations in Orissa and South Bihar are sometimes closed for several months. We recommend that the industry should be given reasonable transport facilities for its materials.

(f) In view of the fact that the cost of raw materials required for the manufacture of bichromates is relatively high in this country, it is incumbent on the industry to do its utmost to improve its manufacturing efficiency and thus maximise the yield. At the previous inquiry, the Tariff Board had adopted certain standards with regard to the consumption of raw materials and we are happy to note that some of the units have improved upon those standards in their actual performance. The following table shows the proportions of raw materials per ton of sodium bichromate adopted by the Tariff Board and those actually attained by the three units costed by us:-

(Per ton of sodium bichromate)

	Board's estimate at the previous inquiry.	Buckingham & Carnatic Mills	Golden Chemicals	Cawnpore Chemicals
	Tons	Tons	Tons	Tons
Chrome ore	1.70	1.31	1.50	2.05
Soda ash	1.25	0.75	1.05	1.04
Lime	0.80	0.97	1.00 (limestone)	0.42 (limestone)
Sulphuric acid	0.60	0.38	0.54	0.51

In the case of some of the units, there is still scope for economy in the use of raw materials and we recommend that such units should make further efforts in this direction.

Quality of the indigenous products

7. The manufacturers have adopted the ISI specification IS:249:1951 for sodium bichromate and we understand from the principal consumers that the indigenous product conforms to these specifications. The standard specifications for potassium bichromate have also been finalised by the I.S.I. Apart from some complaints about lack of consistency in quality, the indigenous bichromates have been found generally satisfactory by the tanneries, textile mills and a section of the paints industry. The Millowners' Association, Bombay, would like the packing to be improved. A more careful inspection of the second hand drums used by the industry is necessary in order to improve the packing of the product. Some of the tanneries have drawn attention to the fact that the indigenous sodium bichromate varies in strength from 96 per cent to 99 per cent. We recommend that the manufacturers should endeavour to maintain the strength of their product at 99 per cent. The Indian Paints Manufacturers' Association have stated that the lack of uniformity in the indigenous sodium bichromate in regard to its sulphate content makes it difficult to obtain correct shades in the pigments for which it is used. At the public inquiry, however, the representatives of the paints industry admitted this to be only a minor defect, because if the bichromate content is maintained at 98 or 99 per cent the variations in the sulphate content could not be large. The Western India Match Company has expressed complete satisfaction with the potassium bichromate supplied by one of the leading manufacturers. As regards the by-products and derivatives, the Development Wing has stated that sodium sulphate produced by the bichromate factories has not yet come up to the standard required by the paper industry, because of the presence of chrome compounds. The Buckingham and Carnatic Mills, however, have informed us that they guarantee 99 per cent

purity in the sodium sulphate supplied by them and that they have so far received no complaints from any of the paper mills which have used their product. We understand that some of the consumers of chromic acid have complained about the quality of the indigenous product and that import licences for chromic acid have been granted in certain special cases on this ground. Since foreign chromic acid would be cheaper, there may be a tendency on the part of some importers or consumers to find fault with the quality of indigenous chromic acid. The indigenous manufacturers claim that the quality of their chromic acid is fully comparable with that of the foreign product. We, therefore, recommend that complaints about the quality of indigenous chromic acid should be thoroughly investigated before imports are allowed.

Imports

8. From 1946 to 1952, no licences were issued for imports of bichromates, except for those required for laboratory purposes. In 1953, imports were not licensed even for laboratory purposes. The following table shows the small quantities of sodium and potassium bichromates as well as chrome compounds imported since 1949-50.

	Cwts.	Rs.
1949-50	47	3390
1950-51	8	2496
1951-52	39	4302
1952-53	569	30107

The manufacturers have stated that if the present ban on imports were removed, the industry would be faced with severe competition from the United Kingdom, the United States and Western Germany.

Exports.

9. Exports of sodium bichromate have not been subject to any restriction since 1949. Exports of potassium bichromate, however, were under control during the period from 2nd November, 1951 to 23rd May, 1952 when exports of this material were allowed on merits within a quota. According to the data received by the Commission, exports of bichromates

amounted to 532 tons in 1947, 638 tons in 1948, 292 tons in 1950 and 574 tons in 1951. The principal destinations were the United Kingdom, Holland, Hongkong and Port Said. No exports could take place in 1949 or 1952. The domestic industry is at present unable to compete in the export market with countries like the United Kingdom, Germany, South Africa and the United States. Unlike India, all these countries except South Africa are dependent on imports of chrome ore, and yet they are able to quote lower prices, because of their advantages in respect of some of the other materials, namely, soda ash, sulphuric acid and fuel oil.

Existing rate of duty

10. Bichromates are assessed to duty under item No.28(17) of the First Schedule to the Indian Customs Tariff, The relevant extract from which is given below:-

Item No.	Name of article	Nature of duty	Standard rate of duty	Preferential rate of duty if the article is the produce or manufacture of			Duration of protective rate of duty
				The United Kingdom	A British colony	Burma	
28(17)	Potassium Bichromate. Sodium Bichromate and Chrome compounds.	Protective	31½% ad valorem	--	--	10½% ad valorem	Dec.31st, 1953

C.I.F. prices.

11. As there have been no imports of bichromates for several years, the Collectors of Customs have not been able to furnish any information regarding the c.i.f. prices of bichromates. The High Commissionfor India, London, however, has informed us in his letter dated 1st September 1953 that the price, c.i.f. Bombay, of sodium bichromate from the United Kingdom is 9.83 d. per lb. or Rs.1225 per ton and that of potassium bichromate 11.83 d. per lb.

or Rs.1470 per ton. The prices of bichromates of German origin are much lower. According to the information received from the Consulate of India, Hamburg, the f.o.b. Hamburg prices of sodium bichromate quoted by various German suppliers about the middle of December, 1953, ranged from Rs.928 to Rs.1,267 per ton and those of potassium bichromate from Rs.1131 to Rs.1,498 per ton. We understand from the same source that exporters in Germany quote different prices for different countries by taking into account the varying market conditions, and since no imports from Germany have taken place, it is difficult to ascertain the exact prices at which supplies from that source are likely to be available to India. The lowest quotation of Rs.928 per ton f.o.b. Hamburg, for sodium bichromate from Germany referred to above, however, agrees with the information received from a different source by the All India Bichromate Manufacturers' Association. The Cawnpore Chemicals have supplied us with copies of their correspondence with importers in the United Kingdom, Holland, Egypt and Hongkong. The lowest price for sodium bichromate quoted in this correspondence is Rs.840 per ton c.i.f. Hongkong. No information, however, is available about the specifications of the material and the source of supply and we have, therefore, decided to ignore this quotation. Allowing for freight and insurance at Rs.40 per ton, the lowest c.i.f. prices from the German sources come to Rs.968 per ton for sodium bichromate and Rs.1171 per ton for potassium bichromate. In working out the quantum of protection needed by the domestic industry, we propose to take into account both the c.i.f. prices of British bichromates as reported by the High Commissioner for India, London and the lowest c.i.f. prices of German bichromates as calculated above.

Commission's estimate of the costs of production and fair ex-works prices of indigenous bichromates.

12. For the purpose of cost investigation, the following units were selected, viz., the Buckingham and Carnatic Mills,Ltd., Madras, (2) the Golden Chemicals, Ltd., Bombay, and (3) the Cawnpore Chemical Chemical Works, Ltd., Kanpur. The results of the cost investigation in each case are briefly

indicated below:-

(a) (i) The Buckingham and Carnatic Mills, Ltd:- The Buckingham and Carnatic Mills are the largest unit, but their entire production of sodium bichromate is utilised in their own dye works. The firm has an annual rated capacity of 1,200 tons and produced 814 tons in 1951, 133 tons in 1952 and 475 tons in the first 9 months of 1953. The lower output in 1952 was due to the cut in electric supply. Out of 475 tons produced from January to September 1953, 196 tons were produced in January to March, 72 tons in April to June and 207 tons in July to September, the fall in production in the second quarter being explained by the shortage of chrome ore. Since the production in the third quarter of 1953 amounted to 69 per cent of capacity, which is approximately the rate which the firm expects to maintain in future, we have adopted the data for that period for estimating the future cost of production. The expenses incurred for the bichromate plant consist partly of direct expenses and partly of indirect expenses, such as administrative salaries, rates and taxes and general works expenses incurred for the firm as a whole. Following the firm's practice which is considered reasonable, 1 per cent of the total indirect expenses have been allocated to the bichromate plant.

(ii) The quantities of various raw materials used by the firm per ton of sodium bichromate have already been indicated in paragraph 6(f) above. The charges incurred by the firm for sulphuric acid and lime are high in comparison with the other two units costed by us. We have calculated the cost of sulphuric acid on the basis of the rate charged by the Mysore Chemicals and Fertilisers, Belagula. As regards lime, we recommend that the Buckingham & Carnatic Mills should explore the possibility of reducing their cost of this material. With regard to depreciation, the original value of the plant which is Rs.7.47 lakhs (including the value of machinery used for the recovery of sulphate and the production of chrome compounds) has already been fully written off, and the firm has now adopted the practice of writing off all additions to the plant in the period of purchase, as such additions are small, both absolutely and in relation to the original value of the plant. The value of additions made during 1953 amounted to less than 5 per cent of the original value of the plant. We have, therefore, allowed for depreciation in accordance with the firm's own practice. Interest on working capital has been allowed at 4½ per cent. per annum on an amount equal to 3 months' cost of production and return at 10 per cent. on the gross block valued at Rs.4.98 lakhs. In view of the fact that the plant is not fully balanced, we have allowed return on two-thirds of the original value of the block.

(iii) The quantity of sodium sulphate recovered in the process of manufacture which varies with the quantity of sulphuric acid used has been estimated for this unit at 0.46 ton per ton of sodium bichromate produced. In the case of all the three units costed by us, credit for sodium sulphate has been taken at the rate of Rs.90 per ton on the following basis:-

Average sale price of sodium sulphate	Rs.250 per ton.
Less estimated processing cost	Rs.160 " "
Net credit.	Rs. 90 " "

(iv) The statement in sub section (d) below gives particulars of the fair ex-works price as determined by us for sodium bichromate produced by this firm. The fair ex-works price works out to Rs.1645.0 per ton.

(b) (i) The Golden Chemicals, Ltd.,:- The firm produces sodium bichromate, potassium bichromate and anhydrous sodium sulphate. The rated capacity of the bichromate plant is 600 tons per annum and the actual production of sodium bichromate was 366.9 tons in 1951-52 (July-June) and 385.7 tons in 1952-53 and that of potassium bichromate 104.3 tons in 1951-52 and 63 tons in 1952-53. We have examined the firm's cost data for both these years and framed estimates of the future cost of production on that basis. In order to determine the cost of production of bichromates and anhydrous sodium sulphate separately, we have allocated the common expenses between the two sections of the plant on the basis of available data supplemented by techinical estimates. The estimates of future costs are related to a production of 600 tons of sodium bichromate which is equal to the firm's full rated capacity. Suitable adjustments have been made in the various elements of costs to take account of higher production in future. The quantity of sodium sulphate recovered per ton of sodium bichromate has been estimated at 0.652 ton per ton of sodium bichromate produced. The cost of potassium bichromate has been calculated by taking 10 tons of sodium bichromate as equivalent to 9 tons of potassium bichromate and adding the cost of potassium chloride required per ton of potassium bichromate to that of $1\frac{1}{9}$ tons of sodium bichromate. Interest on working capital has been allowed at the rate of 4½ per cent per annum on an amount equal to 3 months' cost of production and return on block at 10 per cent on the gross block employed in the manufacture of bichromates which is valued at Rs.3.02 lakhs.

(ii) Particulars of the fair ex-works prices of sodium and potassium bichromates produced by this firm are given in the statement in sub-section (d) below.

The fair ex-works prices work out to Rs.1607.9 per ton of sodium bichromate and Rs.2032.7 per ton of potassium bichromate.

(c) (i) The Cawnpore Chemical Works, Ltd:- The firm produces several chemicals including sodium and potassium bichromate. The bichromate plant has a rated capacity of 1,000 tons per annum, but the actual production of sodium bichromate amounted to 526 tons in 1952 and 403.7 tons in the first 9 months of 1953 and that of potassium bichromate to 15.5 tons in 1952. There was no production of potassium bichromate in the period January-September, 1953. The cost data for the latter period have been adopted by us as the basis for arriving at the future cost of sodium bichromate. In view of strong internal competition and the difficulty of securing a larger coal quota, the firm does not expect to be able to increase its output above the present level. No variation, therefore, is expected to occur in any item of cost other than prices of raw materials and packing expenses for which suitable adjustments have been made in working out the future cost. The overhead charges have been divided between factory overheads and other overheads and the former have been distributed among the various chemicals in proportion to direct wages and the latter in proportion to direct expenses. The firm owns another factory at Kanhan and 10 per cent of the Directors' remuneration and the Managing Agents' allowance has been allocated to that factory. The quantity of sodium sulphate recovered per ton of sodium bichromate has been estimated at 0.616 ton. As in the case of other two firms, interest on working capital has been allowed at 4½ per cent on an amount equal to 3 months' cost of production and return at 10 per cent on the gross block employed in the production of sodium bichromate estimated in this case at Rs.1.41 lakhs.

(ii) The statement in sub-section (d) below gives particulars of the fair ex-works price of sodium bichromate produced by this firm which works out to Rs.1584.3 per ton.

(d) The following statements give particulars of the fair ex-works prices of sodium bichromate produced by the three firms and that of potassium bichromate produced by one of them. Fuller details are given in the Cost Report which is being forwarded to Government as a confidential enclosure to this Report.

STATEMENT A

FAIR EX-WORKS PRICES OF SODIUM BICHROMATE

Details	Buckingham & Carnatic Co. Ltd.	Golden Chemicals Ltd.	Cawnpore Chemical Works Ltd.
	Per ton Rs.	Per ton Rs.	Per ton Rs.
1. Raw materials:	740.7	746.4	807.9
2. Conversion charges	795.8	774.7	747.2
3. Depreciation	32.6	45.8	4.0
4. Packing charges	40.0	32.5	36.5
5. Interest on working capital	17.3	16.8	17.3
	1626.4	1616.2	1612.9
6. Less credit for by-products	41.4	58.7	55.4
	1585.0	1557.5	1557.5
7. Return on block	60.0	50.4	26.8
8. Fair ex-works price	1645.0	1607.9	1584.3

GTL/-

STATEMENT B

FAIR EX-WORKS PRICE OF POTASSIUM BICHROMATE

GOLDEN CHEMICALS LTD.

	Rs. per ton
1. Materials	
(a) Sodium bichromate	1624.9
(b) Potassium chloride	247.0
	1871.9
2. Depreciation	50.9
3. Packing charges	32.5
4. Interest on working capital	21.4
	1976.7
5. Retrun on block	56.0
6. Fair ex-works price	2032.7

(e) It will be seen that the fair ex-works price per ton of sodium bichromate comes to Rs. 1645 for the Buckingham & Carnatic Mills, Rs. 1608 for the Golden Chemicals and Rs. 1584 for the Cawnpore Chemicals. We propose to take the average of these three figures to determine the fair ex-works price of sodium bichromate which would be representative of the industry as a whole. The average comes to Rs. 1612.4 per ton. As regards potassium bichromate, the fair ex-works price of Rs. 2033 per ton determined for the Golden Chemicals may be taken as representative.

Comparison of the fair ex-works prices of the indigenous products with the landed costs of the imported products.

13. We compare below the fair **ex-works prices of indigenous sodium and potassium bichromates as given in para 12(e) above with the landed costs of the corresponding imported products.**

Per ton

	Sodium bichromate		Potassium bichromate	
	From U.K.	From Germany	From U.K.	From Germany
	Rs.	Rs.	Rs.	Rs.
1. C.i.f. price	1225.00	968.00	1470.00	1171.00
2. Customs duty @ 31½%	385.87	304.92	463.05	368.86
3. Clearing charges	10.00	10.00	10.00	10.00
4. Landed cost with duty	1620.87	1282.92	1943.05	1549.86
5. Landed cost without duty	1235.00	978.00	1480.00	1181.00
6. Fair ex-works price of the indigenous product	1612.40	1612.40	2032.70	2032.70
7. Difference between the fair ex-works price and the landed cost	377.40	634.40	552.70	851.70
8. Duty indicated (7 as % of 1)	30.81	65.54	37.60%	72.73%

Measure of protection

14. It will be seen from the figures given in the preceding paragraph that the rates of duty required to place the indigenous products on par with the imported products of British origin are 31 per cent. *ad valorem* for sodium bichromate and 38 per cent. *ad valorem* for potassium bichromate. If the landed costs of the German products are adopted as the basis of comparison, the rates required would be 66 per cent. *ad valorem* for sodium bichromate and 73 per cent. *ad valorem* for potassium bichromate. If imports of bichromates were free from control, it would have been necessary to levy protective duties at the latter rates. Considering, however, that no imports of bichromates are being allowed at present for balance of payments reasons, we are of opinion that no enhancement of the existing protective duty of 31½ per cent. *ad valorem* is called for. We do not think that the cost of materials, which constitutes the chief handicap of this industry, is likely to be materially reduced in the near future. We, therefore, recommend that the protection granted to this industry should be continued at the existing rate of duty for a further period of 4 years from 1st January, 1955. In order to encourage the production of the various derivatives, the protective duty should continue to apply to chrome compounds as well as to sodium bichromate and potassium bichromate.

Supplementary measures

15. We shall now deal with certain other forms of assistance claimed by the industry.

(i) *Ban on imports and prohibition of khaki dyeing of cloth or yarn by materials other than indigenous bichromates:* The industry has asked for continuance of the present ban on imports of bichromates and a complete prohibition of imports of chromic acid, chrome pigments and other chrome salts, as well as of sulphur khaki dyes and vat khaki dyes. Since the industry has surplus capacity and there is sufficient internal

Competition, we presume that continuance of the ban on imports of bichromates will in any case be justified for conservation of foreign exchange. We, therefore, do not find it necessary to make any recommendation about the import control policy regarding bichromates, which will be governed by balance of payments considerations. As regards competition from sulphur or vat khaki dyes, the industry should try to meet it on the basis of price and quality and should not rely on import control for the purpose. On the same ground, we are unable to support the other request made by the industry that Government should prohibit khaki dyeing of cloth or yarn by any material other than indigenous bichromates.

(ii) Concessional freight rates and other transport facilities: The industry has asked that the steamer companies should be requested to grant concessional freight rates for the coastwise movements of its materials and finished products and for the exports of the finished products. A reclassification of bichromates in the Railway Tariff, so as to include it in class III instead of class IX, has also been requested. These matters are primarily within the purview of the transport authorities whom the industry should approach direct through its Association. We would only reiterate what has been stated earlier that it is in principle desirable to take all possible measures which would assist this industry in utilising its surplus capacity, whether for domestic consumption or for exports.

(iii) Export subsidy on bichromates:- The All-India Bichromate Manufacturers' Association has asked for the grant of a subsidy of Rs. 400 per ton on exports of bichromates. The industry is likely to need this subsidy for an indefinite length of time, since the requisite reduction in the cost of its materials is partly dependent on the development of other industries. Further, it is extremely doubtful whether, in the present market conditions, at home or abroad, there is scope for the development of all the units at present engaged in the production of bichromates. In any case, the grant of an export subsidy on a manufactured article like bichromates is precluded by the terms of the General Agreement on Tariffs and Trade to which India is a party. For these reasons, we are unable to support this request.

(a) (iv) New uses of bichromates:- We understand that the National Chemical Laboratory has developed a process for the purification of sugar cane wax which involves the use of bichromates. Sugar cane wax is a waste material available from filter cake of sugar factories. Sugarcane wax can replace Carnuba wax which is used in various types of polishes and is mainly imported. The Premier Chromate and Chemical Works have stated that if this process is fully exploited, the demand for bichromates may increase by as much as 3,000 tons annually and that sugarcane wax, which is at present an absolute waste, will also be put to profitable use. We recommend that the question of commercial exploitation of this process be given early consideration.

(b) Wood preservation offers a promising outlet for bichromates. India's resources of good quality timber are limited, and the country is at present dependent on imports of timber, particularly teakwood, for a part of its requirements. The Forest Research Institute, Dehra Dun has suggested there are several indigenous species of wood which can be upgraded by seasoning and chemical treatment involving the use of bichromates. The Railways already have a few wood preservation plants. The Forest Research Institute is of the opinion (i) that in order to encourage private industry to take up the business of wood preservation, other Government departments like P.W.D., Defence, Posts and Telegraphs and Electricity departments should also set up wood seasoning and preservation plants to meet a part of their requirements and (ii) that the specifications for the structural materials required by Government should be revised so as to include treated and seasoned timber as a substitute for steel and/or teakwood for certain uses. We recommend that steps should be taken in consultation with the Forest Research Institute to encourage wood preservation by chemical treatment, as this will result in conservation of timber resources, economy in the use of steel and increased consumption of bichromates.

(v) Ban on exports of raw hides and skins:- The All-India Bichromate Manufacturers' Association has suggested a ban on, or at least a severe restriction of, the exports of raw hides and skins, with a view to encouraging the chrome tanning industry and thus increasing the consumption of bichromates. Exports of raw (cow and buffalo) hides, however, have been completely prohibited since 1951 and those of raw sheep skins are subject to quota restrictions. Exports of raw goat skins only are allowed freely, but we are advised by the Director of Industries and Commerce, Madras, that since the domestic footwear industry is too small to consume the entire production of chrome tanned furnished leather, it would not be advisable to prohibit the exports of raw goat skins altogether. The Director suggests the levy of an export duty on raw goat skins, but as the suggestion needs to be examined in the light of conditions in the various export markets, we do not wish to make any recommendation on this subject. Both the Tanners' Federation of India, Kanpur, and the All-India Bichromate Manufacturers' Association have suggested that arrangements should be made to secure larger imports of raw hides and skins from Pakistan at reasonable rates. We understand, however, that the inadequate imports from Pakistan are mainly due to the high prices prevailing in that country.

Summary of conclusions and recommendations

16. Our conclusions and recommendations are summarised below:-

(1) The Central Government should draw the attention of the state Governments, Railways, local authorities and semi-Government bodies to the substantial benefit likely to accrue to the domestic bichromate industry by their adoption of khaki uniforms. The attention of the All-India Khadi and Village Industries Board may also be drawn to this matter so far as Khadi uniforms are concerned.

Paragraph 3(a)

(2) The desirability of liberalising the export policy regarding mineral khaki cloth or alternatively, of bringing about an increase in the capacity of the more efficient mills, if the existing capacity of such mills is considered inadequate to permit a liberalisation of exports, should be considered, with a view to expanding the total production of mineral khaki cloth in the country and thereby increasing the consumption of bichromates.

Paragraph 3(b)

(3) The bichromate manufacturers have pointed out certain lacunae in the present import control arrangements regarding sodium bichromate, chromic acid and Brunswick Green which may be looked into. Complaints about the quality of indigenous chromic acid should be thoroughly investigated before imports are allowed.

Paragraph 3(c)& 7

(4) The annual domestic demand is estimated at about 2,400 tons for sodium bichromate and 150 tons for potassium bichromate.

Paragraph 3(d)

(5) The annual rated capacity of the industry is estimated at 6060 tons. Production of sodium bichromates by the 8 units now in existence amounted to 1894 tons in 1950, 2950 tons in 1951, 1387 tons in 1952 and 1660 tons in January-

September 1953. The corresponding figures for potassium bichromates are 126 tons in 1950, 230 tons in 1951, 161 tons in 1952 and 95 tons in the first nine months of 1953. In 1952, the industry was able to utilise barely 25 per cent of its capacity.

Paragraph 4(a)

(6) The Golden Chemicals and the Pioneer Chromate Works have formulated schemes for modernising their plants and processes of production. These schemes may be examined by the Development Wing of the Ministry of Commerce and Industry and if they are found feasible, necessary assistance may be given to the firms in implementing them.

Paragraph 4(c)

(7) The Central Government, in consultation with the State Governments concerned, may examine whether the prices charged by the suppliers of high grade chrome ore are fair in relation to the current prices of low grade ore.

Paragraph 6(a)

(8) The industry should be granted a refund of the customs duty paid by it on imported soda ash which is used in the manufacture of bichromates for export.

Paragraph 6 (c)

(9) The bichromate factories which at present depend mainly on Magadi ash should try to use indigenous ash to the fullest extent possible in preference to imported ash.

Paragraph 6 (c)

(10) The industry should take up the question of freight rates on its materials again with the transport authorities and the latter should give it further consideration in the light of the special circumstances referred to in para 6(e). The industry should be given reasonable transport facilities for its materials.

Paragraph 6 (e)

(11) In the case of some units, there is scope for economy in the use of raw materials and such units should make further efforts in this direction.

Paragraph 6(f)]

(12) The quality of indigenous bichromates has been found generally satisfactory. The manufacturers should, however, endeavour to maintain the strength of their product at 99 per cent. A more careful inspection of the second hand drums used by the industry is necessary in order to improve the packing of the product.

Paragraph 7

(13) The Buckingham and Carnatic Mills should explore the possibility of reducing their cost of lime.

Paragraph 12 (ii)

(14) The fair ex-works price of indigenous sodium bichromate is Rs. 1,612 per ton and that of indigenous potassium bichromate is Rs. 2,033 per ton. The c.i.f. prices of imports from the United Kingdom are Rs. 1,225 per ton of sodium bichromate and Rs. 1,470 per ton of potassium bichromate and those of imports from West Germany are Rs. 968 per ton of sodium bichromate and Rs. 1,171 per ton of potassium bichromate.

Paragraph 11 and 12(e)

(15) If imports of bichromates were free from control, it would have been necessary to increase the protective duty to 66 per cent ad valorem for sodium bichromate and 73 per cent ad valorem for potassium bichromate. Since, however, no imports of bichromates are at present being allowed for balance of payments reasons, no enhancement of the existing protective duty of 31½ per cent ad valorem is called for. The cost of materials, which constitutes the chief handicap of this industry, is not likely to be materially reduced in the near future. The protection granted to this industry should, therefore, be continued for a further period of 4 years from 1st January, 1955. The protective duty should continue to apply to chrome compounds, as well as to sodium and potassium bichromates.

Paragraph 14

(16) The National Chemical Laboratory has evolved a process for the purification of sugar cane wax which is likely to offer an additional outlet for bichromates. The question of commercial exploitation of this process should be given early consideration.

Paragraph 15(iv)(a)

(17) Steps should be taken in consultation with the Forest Research Institute, Dehra Dun, to encourage wood preservation by chemical treatment, as this will result in conservation of timber resources, economy in the use of steel and increased consumption of bichromates.

Paragraph 15(iv)(b)

Acknowledgements.

17. We wish to thank the representatives of manufacturers, consumers and importers of bichromates and the various Government Departments who gave evidence before us and furnished us with much valuable data. Our thanks are also due to Dr.S.R. Ramachandran, Deputy Director, Office of the Textile Commissioner, Shri P.T. Pandya, Senior Scientific Officer of the Ministry of Defence, and Shri A.K. Bose, Assistant Development Officer, Ministry of Commerce and Industry, for their assistance in connection with this inquiry.

B.N. ADARKAR
MEMBER

B.N. DAS GUPTA
MEMBER

C. RAMASUBBAN
MEMBER

D.K.MALHOTRA
SECRETARY

APPENDIX I.

Vide Paragraph 2(a)

LIST OF PERSONS, FIRMS AND ASSOCIATIONS TO WHOM QUESTIONNAIRES WERE ISSUED AND FROM WHOM REPLIES OR MEMORANDA WERE RECEIVED.

*Those who replied to the questionnaires or submitted memoranda.

PRODUCERS:

* 1. All India Bichromate Manufacturers' Association,
Currimbhoy House (East),
Outram Road, Fort,
BOMBAY.

* 2. Indian Chemical Manufacturers' Association,
Sir Vithaldas Chambers,
(6th floor), Apollo Street,
BOMBAY.

3. Bengal Chemical & Pharmaceutical Works Ltd.,
146, Maniktolla Main Road,
CALCUTTA.

4. Bharat Rasayan Ltd.,
2, Dalhousie Square East,
CALCUTTA.

* 5. Buckingham & Carnatic Mills Co. Ltd.,
Post Box No. 66,
MADRAS.

* 6. Cawnpore Chemical Works Ltd.,
Anwar Gunj,
P.O. Box No.27,
KANPUR.

* 7. Government Bichromate Factory,
Belagula,
(MYSORE STATE RAILWAY).

* 8. Golden Chemicals Ltd.,
Vile Parle,
BOMBAY.

* 9. Hindustan Chemical Works Ltd.,
Advani Chambers, P.M. Road,
Fort,
BOMBAY.

10. Krishna Chemical Works,
15, Netaji Subhas Road,
CALCUTTA.

* 11. Pioneer Chromate Works Ltd.,
Shreenivas House (East),
Outram Road, Fort,
P.O. Bag No.1084,
BOMBAY-1.

* 12. Premier Chromate & Chemical Works Ltd.,
Sambava Chambers,
Sir P.M. Road, Fort,
BOMBAY.

PRODUCERS: (Contd..)

13. United Chemical Co.,
23/A, Netaji Subhas Road,
CALCUTTA.

14. Zenith Commercial Co., Ltd.,
161, Lansdown,
CALCUTTA.

* 15. Chemical Industries Co. Ltd.,
29, Strand Road,
CALCUTTA.

IMPORTERS:

1. Nanavati & Co. Ltd.,
16, Apollo Street,
BOMBAY.

2. Ravel Brothers,
185, Princess Street,
BOMBAY.

* 3. Imperial Chemical Industries (India) Ltd.,
18, Strand Street,
CALCUTTA.

CONSUMERS:

* 1. Paint Federation,
Royal Exchange,
CALCUTTA.

* 2. Indian Paint Manufacturers' Association,
23-B, Netaji Subhas Road,
CALCUTTA-1.

3. Bangalore Spinning & Weaving Mills Ltd.,
BANGALORE.

* 4 Chrome Leather Co.Ltd.,
Chromepet P.O.,
MADRAS.

* 5. Government Wood Preservation Plant,
BHADRAVATI.

6. Khatau Makanji Spinning & Weaving Mills Ltd.,
Lakshmi Buildings,
Ballard Estate,
BOMBAY.

7. Hardcastle Waud & Co. Ltd.,
Alice Building,
Hornby Road,
BOMBAY.

* 8. Kesar Sugar Works Ltd.,
45-47, Apollo Street, Fort,
Post Box No.746, Bombay.

9. India United Mills Ltd.,
Dougall Road, Ballard Estate,
BOMBAY.

* 10. Mysore Chrome Tanning Co. Ltd.,
BANGALORE.

CONSUMERS: (Contd..)

* 11. Tanners Federation of India,
KANPUR.

12. Morarji Gokuldas Spinning & Weaving Co. Ltd.,
Separi Baug Road,
Parel Road,
BOMBAY.

* 13. Western India Tanneries Ltd.,
Dharavi, Near Mahim Rly. Station,
BOMBAY.

* 14. Millowners' Association,
Elphinstone Building,
Churchgate Street,
Post Box No.95,
BOMBAY.

15. Mysore Spinning & Weaving Mill Co. Ltd.,
BANGALORE.

16. C.P. & Berar Millowners' Association,
Post Box No.3,
NAGPUR.

17. Minerva Mills Ltd.,
BANGALORE.

* 18. Western India Match Co. Ltd.,
Indian Mercantile Chambers,
Nicol Road, Ballard Estate,
BOMBAY.

* 19. The Cycle Manufacturers' Association,
23-B, Netaji Subhas Road,
CALCUTTA.

20. All India Cycle Accessories Manufacturers' Association,
20, Netaji Subhas Road,
CALCUTTA.

APPENDIX II.

Vide paragraph 2(b).

List of persons who attended the Commission's public inquiry on 15th December 1953.

PRODUCERS:

1.	Shri Purshotamdas Popatlal	Representing	All India Bichromate Manufacturers' Assn. Bombay and Pioneer Chromate Works Ltd., Bombay.
2.	Shri Lalbhai Patel	"	All India Bichromate Manufacturers' Assn., Bombay, and Premier chromate and Chemical Works Ltd., Bombay.
3.	Mr. P.D. Whiteley	"	Buckingham & Carnatic Mills Co., Ltd., Madras.
4.	Mr. J.V.S. Milne	"	- Do -
5.	Mr. T.F. Ross	"	Cawnpore Chemical Works Ltd., Kanpur.
6.	Shri Chaturbhuj N. Thacker	"	Golden Chemicals Ltd., Bombay.
7.	Shri S.K. Oza	"	- Do -
8.	Shri E.V. Ganapati Iyer	"	Government Bichromate Factory Belagula, Mysore.
9.	Shri H.V. Shreenivasan Rangachar	"	- Do -
10.	Shri Mohanlal T. Shah	"	Hindustan Chemical Works Ltd., Bombay.
11.	Shri H. C. Bose	"	Chemical Industries Co., Ltd., Calcutta.
12.	Shri H. S. Ramanathan	"	Indian Chemical Manufacturers' Association, Bombay.

IMPORTERS

1.	Mr. A.M. Cameron	"	Imperial Chemical Industries Co. Ltd., Calcutta.

CONSUMERS:

1.	Shri S.P. Pandit	"	Tanners' Federation of India, Kanpur.
2.	Shri S.V. Sathaye	"	Paint Federation, Calcutta.

SUPPLIER OF RAW MATERIAL

1.	Shri S.P. Kesan	Representing	Eastern Chemical Co. Ltd., Bombay.

OFFICIALS:

1.	Shri A. K. Bose	Assistant Development Officer (Heavy Chemicals), Ministry of Commerce and Industry (Development Wing), New Delhi.
2.	Dr. S.R. Ramachandran	Deputy Director, Textile Commissioner' Office, Bombay.
3.	Shri P.T. Pandya	Senior Scientific Officer, Ministry of Defence, Government of India, New Delhi.